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INEFFICIENT FUMIGATION

By MABEL F. HUNTLY, R.N.

Chicago, Illinois

A nurse in a small general hospital was ordered to fumigate a room from which a tuberculous patient had been discharged after an occupancy of twenty weeks. Twelve hours later the room was entered by a head nurse who found that the nurse had sealed it for fumigation just as it was left on the discharge of the patient, except that the bed linen had been thrown over the chair back, the mattress over the foot of the bed, and the bureau drawers opened. I hear quite a large body of nurses asking: "What more do you want? We have been taught not to clear a room, but to fumigate as it stands."

Look about this room for a minute with the eyes of the nurse who entered to inspect it. On the window-sill is a sputum box, a metal box with paper refill, but the patient was feeble, the cup two-thirds full, and he had not been able to keep the outside clean. On the bedside table stand his drinking glass and tube; a plate with fruit peelings and knife. On the floor is the gauze handerchief, soiled with sputum and blood, as it fell from his hand. Various magazines and papers litter the table and bureau; all have been handled within the week by the patient, for the hemorrhage and death have come after some weeks of comparative comfort during which he was up and about his room. An open box of "Lowney's" caused the head nurse to wonder if her pupil had thoughts of a feast after "it was fumigated;" the tooth and shaving brush, a half-used cake of soap and other toilet articles are still in evidence but, without attempting to enumerate further, the room contained all the various and now useless, articles which were daily and hourly needed and handled by the patient whose every touch meant contamination.

The room had been fumigated according to the health laws of the state, but how nearly have we reached the point of rendering a room and its furnishings sterile when we disinfect if after the manner described? Formaldehyde gas, the bacteriologists tell us, is a very efficient germicide for every microörganism *which it can reach*, but its penetrating powers are almost nil; therefore only the top of the magazine or paper is sterile, the inside surfaces and surfaces upon which they lay are still infected. Will the nurse who now clears the room treat them as infected material? The outside of the sputum box is sterile, the surface upon which it rested, and its bottom are not. It is also still filled with non-sterile sputum; will she remember that in handling it? The dishes, now "disinfected" will probably be put with other "clean" dishes to be washed; what about the under surfaces to which the gas was unable to penetrate? It is impossible to expose all of the many surfaces of two or three sheets and blankets, a spread, pillows etc., to direct contact with the gas and, even if the nurse thinks of this and carefully gathers the soiled linen and takes it directly to the solution ready for this purpose, there will be many organisms scattered into the air of the "disinfected" room in the process.

In fact, are we not, in clearing the room of all these articles which could be much more completely disinfected by other methods, undoing our work of fumigation of the *room* which, with its furnishings, *must* be fumigated with the gas? We can neither burn, boil nor immerse in solution the walls of the room, the bureau, etc. We gain a feeling of false security by the use of the gas, which makes the further cleaning of the room seem an unimportant task which need not be accompanied by any especial aseptic precautions, for has it not been fumigated?

There is a very decided inconsistency in practicing daily the boiling of dishes, immersion of linen, burning of sputum cup refills and then, on the discharge of the patient, being afraid to handle these same articles until they have been fumigated. If, in the disinfecting process they were rendered sterile, there could be no criticism of this method, but, on analysis, it would seem that this is an ideal impossible to reach with a gas which cannot penetrate porcelain, glass, various folds of linen, paper, etc.

Let us not forget that the most efficient antiseptic of all is prevention of contamination and teach our nurses to care for the patient, the public and herself with this thought constantly in mind. The most efficient germicide is the flame; therefore, all infected useless articles should be burned as soon after contamination as possible, and next to burning, comes steam under pressure and boiling. If, then, the installation of a sterilizer for the steaming of mattresses, pillows, blankets and patients' clothing is practicable, let us have that in our hospitals together with adequate sterilizers for dishes, bed utensils, etc. And, if we haven't this modern apparatus, let us expose the surfaces of our mattresses, etc., as completely as possible to the formaldehyde and boil in a covered basin, pail, or wash boiler every porcelain, glass or agate utensil.

Our system of cleaning a room in a private home or in the hospital which has no steam sterilizer resolves itself into something like this:

1. As soon as the patient is discharged, gather into fresh paper sacks every article which can be burned and carry directly to the furnace or incinerator, or at least place the sacks directly into a covered

receptacle which should be emptied directly into the incinerator at stated times. (Remember that toilet articles, etc., will never be used again and should be burned at once.)

2. Place all dishes in their sterilizer, cover with water and boil.
3. Place all enamel and agate utensils in their sterilizer and boil.
4. Gather all linen into a clean or sterile bag or sheet and immerse immediately in disinfecting solution.
5. Seal windows, transoms, etc.
6. If practicable, suspend the mattress and pillows in the center of the room and sprinkle them well with water. (Fortunately, the bacteriologists tell us, bacteria cannot penetrate the closely woven ticking and surface disinfection of these articles is sufficient if we make it possible for the gas to reach all surfaces.)
7. Hang blankets, completely unfolded, over head and foot of bed; they may even be suspended from light fixtures, picture moldings, etc.
8. Leave the heat turned on, if it can be done without admitting air at the same time. Sprinkle water freely over all surfaces, floor included. Pull down the window shades.
9. Introduce the gas.
10. Seal the door from the outside.
11. Leave sealed according to the state law.
12. Unseal the room and clean it from ceiling to floor, including every article of furniture, bedding, etc., as thoroughly as if it had received no fumigation whatever. Particles of dust and dirt may so surround the bacteria that the gas cannot find entrance.

HOSPITAL SOCIAL SERVICE[1]

By SARAH BURROWES

Ann Arbor, Michigan

The old-fashioned family physician, whatever his shortcomings, had this great advantage over the staff of a modern hospital: he knew his patient as a human being, not simply as a case. He knew the family, with all its physical and moral tendencies; he knew the occupation and the financial status of his patient; he knew his social connections, his church, his fraternity and, therefore, he knew that the best remedy for Mrs. Jones' nervous indigestion was not nux vomica and gentian, but a good, straight-from-the-shoulder temperance talk with

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[1] Read at the eleventh annual meeting of the Michigan State Nurses' Association and second annual meeting of the Michigan State League of Nursing Education.